Listing of Claims:

1. (Currently Amended) An apparatus for processing a radiation image, comprising:

a pixel-value analyzing section to analyze ~~a pixel value~~ pixel-values within a step pattern of a wedge area in ~~which a density varies step by step, wherein~~ said radiation image, ~~includes~~ said wedge area being an area in which a density varies step by step; ~~and~~

a suspicious region analyzing section to detect a candidate of a suspicious region ~~by~~ using information outputted from said pixel value analyzing section; and

a step position-detecting device for detecting a step position of said wedge area based on a feature of a change amount of the pixel-values;

wherein a region of interest is determined based on said step position detected by said step position-detecting device; and

wherein said step position-detecting device obtains profiles at a plurality of positions in a plurality of directions to find an area at which said pixel-values vary step by step, to detect said step position.

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2. (Currently Amended) The apparatus of claim 1, wherein said suspicious region analyzing section comprises [[:]] a gradation-adjusting section to adjust a gradation of said radiation image based on the ~~basis of~~ information ~~, pertaining to said pixel values,~~ outputted by said pixel-value analyzing section.

3. (Currently Amended) The apparatus of claim 1, wherein said suspicious region analyzing section comprises [[:]] a parameter-adjusting section to adjust a parameter for detecting said candidate of said suspicious region based on the ~~basis of~~ information ~~, pertaining to said pixel value,~~ outputted by said pixel-value analyzing section.

4. (Currently Amended) The apparatus of claim 2, further comprising [[:]] a ~~first~~ suspicious region detecting section to detect said candidate of said suspicious region based on ~~the basis of~~ said radiation image [[,]] having said gradation ~~of~~ which is adjusted by said gradation-adjusting section.

5. (Currently Amended) The apparatus of claim 3, further comprising [[:]] a ~~second~~ suspicious region detecting section to detect said candidate of said suspicious region ~~by~~ using said parameter for detecting said candidate of said suspicious region,

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said parameter being adjusted by said parameter-adjusting section.

6. (Currently Amended) The apparatus of claim 4, further comprising [[:]] an image-outputting section to output said radiation image [[,]] having said gradation ~~of~~ which is adjusted by said gradation-adjusting section.

7. (Currently Amended) The apparatus of claim 4, further comprising [[:]] an outputting section to output both a result of detecting said suspicious region ~~in~~ by said ~~first~~ suspicious region detecting section and said radiation image having said gradation adjusted by said gradation-adjusting section.

8. (Currently Amended) The apparatus of claim 5, wherein said suspicious region analyzing section comprises a gradation-adjusting section to adjust a gradation of said radiation image based on the information outputted by said pixel-value analyzing section; and

wherein the apparatus further ~~comprising.~~ comprises an outputting section to output both a result of detecting said suspicious region ~~in~~ by said ~~second~~ suspicious region detecting section and said radiation image having said gradation adjusted by said gradation-adjusting section.

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Claims 9 and 10 (Canceled).

11. (Currently Amended) The apparatus of claim 2, further comprising [[:]] an image-outputting section to output said radiation image [[,]] having said gradation ~~of~~ which is adjusted by said gradation-adjusting section.

12. (Currently Amended) The apparatus of claim 2, wherein said radiation image is a mammography having said gradation adjusted by said gradation-adjusting section, and the apparatus further ~~comprising:~~ comprises an image-classifying section to classify said mammography ~~, said gradation of which adjusted by said gradation-adjusting section, corresponding to~~ based on a degree of involution of mammary glands.

Claim 13 (Canceled).

14. (Currently Amended) ~~The~~ An apparatus ~~of claim 8, further~~ for processing a radiation image, comprising:

a pixel-value analyzing section to analyze pixel-values within a step pattern of a wedge area in said radiation image, said wedge area being an area in which a density varies step by step;

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a suspicious region analyzing section to detect a candidate of a suspicious region using information outputted from said pixel value analyzing section, said suspicion region analyzing section comprising: (i) a parameter-adjusting section to adjust a parameter for detecting said candidate of said suspicious region based on the information outputted by said pixel-value analyzing section, and (ii) a gradation-adjusting section to adjust a gradation of said radiation image based on the information outputted by said pixel-value analyzing section;

a suspicious region detecting section to detect said candidate of said suspicious region using said parameter for detecting said candidate of said suspicious region, said parameter being adjusted by said parameter-adjusting section;

an outputting section to output both a result of detecting said suspicious region by said suspicious region detecting section and said radiation image having said gradation adjusted by said gradation-adjusting section; and

a step position-detecting device for detecting a step position of said wedge area based on ~~the basis of~~ a feature of a change amount of the pixel-values;

wherein a region of interest is determined based on ~~the basis of~~ said step position detected by said step position-detecting device.

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15. (Currently Amended) ~~The~~ An apparatus ~~of claim 8, wherein said radiation image~~ for processing a radiation image that is a mammography, ~~further~~ said apparatus comprising:

a pixel-value analyzing section to analyze pixel-values within a step pattern of a wedge area in said radiation image, said wedge area being an area in which a density varies step by step;

a suspicious region analyzing section to detect a candidate of a suspicious region using information outputted from said pixel value analyzing section, said suspicion region analyzing section comprising: (i) a parameter-adjusting section to adjust a parameter for detecting said candidate of said suspicious region based on the information outputted by said pixel-value analyzing section, and (ii) a gradation-adjusting section to adjust a gradation of said radiation image based on the information outputted by said pixel-value analyzing section;

a suspicious region detecting section to detect said candidate of said suspicious region using said parameter for detecting said candidate of said suspicious region, said parameter being adjusted by said parameter-adjusting section;

an outputting section to output both a result of detecting said suspicious region by said suspicious region detecting section and said radiation image having said gradation adjusted by said gradation-adjusting section; and

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an image-classifying section to classify said mammography [[,]] having said gradation ~~of which~~ adjusted by said gradation-adjusting section, ~~corresponding to~~ based on a degree of involution of mammary glands.

16. (Currently Amended) ~~The~~ An apparatus ~~of claim 6,~~ for processing a radiation image, comprising:

a pixel-value analyzing section to analyze pixel-values within a step pattern of a wedge area in said radiation image, said wedge area being an area in which a density varies step by step;

a suspicious region analyzing section to detect a candidate of a suspicious region using information outputted from said pixel value analyzing section, said suspicious region analyzing section comprising a gradation-adjusting section to adjust a gradation of said radiation image based on the information outputted by said pixel-value analyzing section;

a suspicious region detecting section to detect said candidate of said suspicious region based on said radiation image having said gradation which is adjusted by said gradation-adjusting section; and

an image-outputting section to output said radiation image having said gradation which is adjusted by said gradation-adjusting section;

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wherein said image-outputting section outputs at least one of a voltage applied to a radiation tube, a ~~mA~~ mAs value, a sec. value, a kind of an added filter, a kind of a radiation tube, a thickness of a focal point size, a compressing pressure, an enlarging ~~late~~ rate and a tilt angle onto a partial area of said radiation image, on which a subject image does not overlap.

17. (Currently Amended) The apparatus of claim 15, wherein said outputting section outputs at least one of a voltage applied to a radiation tube, a mAs value, a kind of an added filter, a kind of a radiation tube, a thickness of a focal point size, a compressing pressure, an enlarging ~~late~~ rate and a tilt angle onto said mammography.

18. (Currently Amended) The apparatus of claim 4, ~~where~~ wherein said suspicious region analyzing section comprises [[:]] a parameter-adjusting section to adjust a parameter for detecting said candidate of said suspicious region based on the ~~basis of~~ information ~~, pertaining to said pixel value,~~ outputted by said pixel-value analyzing section; and ~~a second~~

wherein the apparatus further comprises another suspicious region detecting section to detect said candidate of said suspicious region ~~by~~ using said parameter for detecting said candidate of said suspicious region, said parameter being adjusted by said parameter-adjusting section.

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